AMENDED CLAIMS

Claims 1-18 (Canceled)

Claim 19 (New): An apparatus for refilling a printer cartridge, said apparatus comprising:

a dock for the printer cartridge,

a dock for an ink replenishment cartridge having an ink receiver,

an ink draw off conduit adapted to connect a docked printer cartridge to the ink receiver of a docked ink replenishment cartridge with the ink receiver,

an ink replenishment draw in conduit to connect an ink replenishment outlet of the docked ink replenishment cartridge to the ink draw off conduit, one of the ink replenishment cartridge and the ink replenishment draw in conduit, and the ink replenishment draw in conduit, being adapted to allow only draw off flow from the ink replenishment cartridge outlet,

a circuit completing conduit and at least part of the ink replenishment draw in conduit to connect the ink draw off conduit to the docked printer cartridge,

a pump operable to pump in either direction on the circuit defined in part by at least part of the ink draw off conduit and in part by at least part of the circuit completing conduit,

a one way valve on the ink draw off conduit between (i) the ink replenishment cartridge dock and (ii) the circuit and the ink draw off conduit, the valve favouring flow to the ink replenishment cartridge dock, and

a one way threshold valve on the circuit,

wherein a flow system arising from the apparatus is operable in the following modes,

(a) an ink draw off mode with the pump operating in a first direction to take ink from within the docked printer cartridge into the ink receiver of the docked ink replenishment cartridge, the draw off mode not involving flow via said one way valve on the circuit,

(b) an ink supply mode with the pump operating in a second direction to supply ink from within the docked ink replenishment cartridge into the docked printer cartridge,

and

(c) an ink re-routing mode with the pump operating in the second direction to re-route ink taken into the flow system from within the docked ink replenishment cartridge in mode (b) operation, the re-routing to:

(1) cycle ink in the conduit when over a threshold pressure of and via the one way threshold valve on the circuit,

(2) discharge ink into the ink receiver when over a threshold pressure of a one way threshold valve on the ink draw in circuit, via one of both said one way threshold valves and both (1) and (2).

Claim 20 (New): The apparatus of claim 19, wherein the flow system is subject to, at least in part, electrical control of the pump and/or valving of at least one conduit after being initiated, and the flow system:

(i) can operate in mode (a) and then

(ii) while having at least the possibility of acting wholly or in part in mode (c), can operate in mode (b).

Claim 21 (New): The apparatus of claim 19, wherein said flow system is operable with the pump operating in the first direction in a mode (d), where mode (d) is a variation of the ink draw off mode (a), and there is a draw off of some fluid from within a mode (b) filled or part filled docked printer cartridge, and the fluid is one of ink and air, and air.

Claim 22 (New): The apparatus of claim 21, wherein there is a programmed or electronic control of the pump and/or valving of at least one conduit where the flow system iterates the sequence of

(I) mode (b) alone or both modes (b) and (c), and

(II) mode (d).

Claim 23 (New): The apparatus of claim 19, wherein the flow system includes an electrically controlled pump capable of operating in two directions.

Claim 24 (New): The apparatus of claim 19, wherein the pump and valving in the flow system prevents any substantial reverse flow of ink to the flow direction(s) in mode (b) yet will allow for ink within part of the flow system and, if above a threshold pressure, at least some routing of ink to the ink receiver.

Claim 25 (New): The apparatus of claim 19, wherein the flow system in mode (b) filters the ink supply prior to its passage into the docked printer cartridge.

Claim 26 (New): The apparatus of claim 19, wherein there is an electronic control of the flow system mode responsive to sensors adapted to detect at least one of:

the presence of the docked printer cartridge,

the presence of the ink replenishment cartridge,

the status of the docked printer cartridge,

the status of the docked ink replenishment cartridge,

ink status in the flow system,

the integrity of the flow system, and

the integrity of the flow system relationship with at least one of: the printer cartridge, the ink replenishment cartridge and the ink receiver.

Claim 27 (New): The apparatus of claim 19, wherein said ink replenishment cartridge is docked in the dock and said ink replenishment cartridge includes said ink receiver.

Claim 28 (New): The apparatus of claim 27, wherein said flow system is connected to at least one of the ink replenishment cartridge, the ink receiver and the printer cartridge by a cannula.

Claim 29 (New) A system comprising:

(A) an apparatus for refilling a printer cartridge,

(B) an ink replenishment cartridge,

(C) an ink receiver, and optionally,

(D) a printer cartridge,

wherein the apparatus (A) for refilling a printer cartridge includes:

a dock for a printer cartridge,

a dock for an ink replenishment cartridge,

a dock for the ink receiver,

an ink draw off conduit adapted to connect the printer cartridge when docked to the ink receiver,

an ink replenishment draw in conduit to connect an ink replenishment outlet of a docked ink replenishment cartridge to the ink draw off conduit, an appropriate ink replenishment cartridge and/or the ink replenishment draw in conduit being adapted to allow or favour only draw off flow from the ink replenishment cartridge outlet,

a circuit completing conduit and at least part of the ink replenishment draw in conduit to connect the ink draw off conduit to a docked printer cartridge,

a pump operable to pump in either direction on the circuit defined in part by at least part of the ink draw off conduit and in part by at least part of the circuit completing conduit,

a one way valve on the ink draw off conduit between (i) the ink replenishment cartridge dock and (ii) the circuit and the ink draw off conduit, the valve favouring flow to the ink replenishment cartridge dock, and

a one way threshold valve on the circuit,

wherein a flow system arising from the system is operable in the following modes:

(a) an ink draw off mode with the pump operating in a first direction to take ink from within the docked printer cartridge into the ink receiver of a docked ink replenishment cartridge, the draw off mode not

involving flow via said one way valve on the circuit,

(b) an ink supply mode with the pump operating in a second direction to supply ink from within a docked ink replenishment cartridge into a docked printer cartridge, and

(c) an ink re-routing mode with the pump operating in the second direction to re-route ink taken into the flow system from within a docked ink replenishment cartridge in mode (b) operation, such re-routing to:

(1) cycle ink in the circuit when over a threshold pressure of and via the one way threshold valve on the circuit,

(2) discharge ink into the ink receiver when over the threshold pressure of both one way threshold valves or

(3) both (1) and (2).

Claim 30 (New): The system of claim 29, wherein said ink replenishment cartridge includes said ink receiver.

Claim 31 (New): The system of claim 29, wherein said docking cannula connects at least one of (B) (C) and (D) to the flow system.

Claim 32 (New): A method of refilling a printer cartridge comprising:

using a system for refilling the printer cartridge, the system including:

(A) an apparatus for refilling the printer cartridge,

(B) an ink replenishment cartridge having an ink supply reservoir, and

(C) an ink receiver, the ink receiver is one of part of the ink replenishment cartridge and separate from the ink replenishment cartridge,

wherein the apparatus (A) for refilling a printer cartridge includes:

a dock for a printer cartridge,

a dock for the ink replenishment cartridge,

a dock for the ink receiver, and

an ink draw off conduit adapted to connect the printer cartridge when docked to the ink receiver, said conduit having two same direction

one way valves each favouring flow from the dock for the printer cartridge to the dock for the ink receiver,

an ink replenishment draw in conduit to connect the ink replenishment outlet to the ink draw off conduit, the ink replenishment cartridge and/or the ink replenishment draw in conduit adapted to allow or favour only draw off flow from the ink replenishment outlet of the ink replenishment cartridge,

a circuit completing conduit and at least part of the ink replenishment draw in conduit to connect the ink draw off conduit to the printer cartridge when docked,

a pump operable to pump in either direction on the circuit defined in part by at least part of the ink draw off conduit and in part by at least part of the circuit completing conduit,

(I) dock connecting:

(1) the ink supply reservoir of an ink replenishment cartridge,

(2) the ink reservoir of a printer cartridge, and

(3) an ink receiver into the apparatus, and,

(II) using the apparatus by:

(a) drawing off at least some of any ink from within the ink reservoir of the printer cartridge and passing that fluid into the ink receiver,

(b) supplying ink from the ink supply reservoir of the ink replenishment cartridge into the ink reservoir of the printer cartridge, and

(c) halting flow of ink to the ink reservoir of the printer cartridge when

(i) the ink replenishment cartridge is empty of ink, and

(ii) the ink reservoir of the printer cartridge is full of ink,

wherein halting of the supply of ink, when the ink reservoir of the printer cartridge is full includes one of diverting and cycling, in the conduiting, ink already taken from within the ink replenishment cartridge.

Claim 33 (New): The method of claim 32, wherein step (a) and step (b) require opposite rotation of a pump.

Claim 34 (New): The method as claimed in claim 32, further comprising: (d) relieving of pressure from within the ink reservoir of the filled printer cartridge by drawing off some fluid therefrom.

Claim 35 (New): The method as claimed in claim 32, wherein at least one of the docks uses a cannula.

Claim 36 (New): The apparatus of claim 20, wherein said flow system is operable with the pump operating in a first direction in a mode (d), where mode (d) is a variation of the ink draw off mode (a), and there is a draw off of some fluid from within a mode (b) filled or part filled docked printer cartridge, and the fluid is one of ink and air, and air.

Claim 37 (New): The apparatus of claim 36, wherein there is a programmed or electronic control of the pump and/or valving of at least one conduit of the conduiting whereby the flow system iterates the sequence of
(I) mode (b) alone or both modes (b) and (c), and
(II) mode (d).

Claim 38 (New): The system of claim 30, wherein said docking cannula connects at least one of (B) (C) and (D) to the flow system.

Claim 39 (New): The method as claimed in claim 33, further comprising:

(d) relieving of pressure from within the ink reservoir of the filled printer cartridge by drawing off some fluid therefrom.